

## COPOLYMERS FOR CAPILLARY GEL ELECTROPHORESIS

### ABSTRACT

5           This invention relates to an electrophoresis separation medium having a gel  
matrix of at least one random, linear copolymer comprising a primary comonomer and at  
least one secondary comonomer, wherein the comonomers are randomly distributed along  
the copolymer chain. The primary comonomer is an acrylamide or an acrylamide  
derivative that provides the primary physical, chemical, and sieving properties of the gel  
10   matrix. The at least one secondary comonomer imparts an inherent physical, chemical, or  
sieving property to the copolymer chain. The primary and secondary comonomers are  
present in a ratio sufficient to induce desired properties that optimize electrophoresis  
performance. The invention also relates to a method of separating a mixture of biological  
molecules using this gel matrix, a method of preparing the novel electrophoresis separation  
15   medium, and a capillary tube filled with the electrophoresis separation medium.